

WHAT IS CLAIMED IS:

1. A vehicle gauge comprising:
 - a) means to measure distance travelled by the vehicle,
 - 5 b) means to aggregate and store total distance travelled by the vehicle over its lifetime,
 - c) means to sense vehicle engine status as running or not running,
 - d) means to infer and record aggregate lifetime engine run-time hours,
 - 10 e) means to calculate average lifetime vehicle speed, wherein said average lifetime vehicle speed only includes speeds obtained by the vehicle while the vehicle engine is running,
 - f) means to update and store average lifetime vehicle speed.
2. The gauge of claim 1 where the means to measure, aggregate and store distance
15 travelled by the vehicle is a conventional odometer providing digital information as its output.
3. The gauge of claim 1 where the means to sense vehicle engine status as running or not
20 running is chosen from among: ignition information supplied within the engine management systems, engine tachometer readings above a threshold, engine temperature readings in operating range, produced exhaust gas data supplied within the engine management systems, engine vibration sensor data, fuel flow sensor data, flywheel movement sensor data.
- 25 4. The gauge of claim 2 where the means to infer and record aggregate lifetime engine run-time hours includes a process comprising the steps of:
 - a) sensing engine status change from not-running to running,
 - b) recording start time data from clock time,
 - c) sensing engine status change from running to not-running,

- d) recording end time data from clock time,
- e) subtracting engine start time from engine end time to obtain total run time for that cycle,
- f) adding total run time for that cycle to total run time of all prior cycles from memory to obtain new total run time, and
- g) replacing old total run time with newly obtained total run time.

5. The gauge of claim 1 wherein the means to infer and record aggregate lifetime engine run-time hours comprises:

- a) means for communication from engine status sensing means to a recorder,
- b) means for communications from a clock to the recorder,
- c) a recorder for recording start time when the sensor communicates the engine's status has changed from not-running to running, and for recording end time when the sensor communicates the engine's status has changed from running to not-running,
- d) a calculator which subtracts start time from end time and stores the resulting cycle run-time, and
- e) a data store which accumulates life-time engine run-time.

6. The gauge of claim 4 where the means to infer and record aggregate lifetime engine run-time hours provides digital information as its output.

7. The gauge of claim 1 where the means of calculating the average lifetime vehicle speed comprises the step of:

dividing the output of the means to infer and record aggregate lifetime engine run-time hours by the output of the means measure, aggregate and store distance travelled by the vehicle and the calculation's results is provided to the display.

8. The gauge of claim 1 where the display comprises:
- a) a digital display
 - b) a user interface, such as a button or similar input device and the user interface permits the user to toggle the display between displaying aggregate lifetime engine run-time, aggregate lifetime vehicle distance travelled, and average lifetime vehicle speed.
9. The gauge of claim 8 where the display also provides an indication to the end user, based upon the average lifetime vehicle speed, that the vehicle's lifetime use has been "mainly idled", "driven at high speed", "mainly highway", "mainly city" or similar indicators of vehicle use.
10. The gauge of claim 1 where the gauge is tamper-evident.
11. The gauge of claim 1 where the gauge is tamper-proof.
12. The gauge of claim 3 wherein the threshold is zero rpm.
13. The gauge of claim 3 wherein the threshold is non-zero rpm.
14. The gauge of claim 3 wherein the threshold is above-idle rpm.
15. The process of claim 4 further comprising the steps of calculating said average lifetime vehicle speed and comparing said speed with a pre-set range of speeds wherein a first pre-set range of speed indicates vehicle use as predominantly highway use, and wherein a second pre-set range of speed indicates vehicle use as predominantly city use.

16. The gauge of claim 1 further comprising means to sense when the engine is accelerating the vehicle, means to record and store cumulatively total acceleration time of the engine while accelerating the vehicle, and means to record and store, for later reading of, average vehicle speed during the acceleration time, whereby an end user may determine whether the vehicle use while the engine was under load due to acceleration was mainly highway use or mainly city use.
17. The process of claim 15 further comprising the steps of sensing when the engine is accelerating the vehicle, recording and storing cumulatively total acceleration time of the engine while accelerating the vehicle, and recording and storing, for later reading of, average vehicle speed during the acceleration time, whereby an end user may determine whether the vehicle use while the engine was under load due to acceleration was mainly highway use or mainly city use.